

WHAT IS CLAIMED IS:

1. A process for manufacturing rhomboidal blades for axial turbo engines, the blades having a blade footing of a rhomboidal cross section and a blade body, the process comprising the steps of:

5 hot rolling a bar-shaped input stock up to a cross section having a shape of a rhomboid adapted to a shape of the cross section of the rhomboidal blade footing and being larger on all sides than a maximum cross section of the blade only by a minimum oversize for machining of 1 to 3 mm;

cutting the bar-shaped input stock into blanks having a length corresponding to a length of the blade increased by clamping ends necessary for machining;

10 forming the blade footing and the blade body by machining the blank.

2. A process in accordance with claim 1, wherein:

said machining is milling;

said hot forming of said bar-shaped input stock is performed by one of hot rolling, drop forging, press forging, and precision forging.

3. A process for manufacturing a turbine blade having a maximum cross section of a rhomboidal shape, the process comprising the steps of:

providing a machining process for removing material from a workpiece to create a final

shape, said machining process requiring the workpiece to be larger than the final shape by a
5 minimum machining allowance in order to create the final shape;

hot forming a bar stock to have a bar stock cross section with a rhomboidal shape, a
maximum size of said bar stock cross section being equal to the maximum cross section of the
turbine blade plus said minimum machining allowance of said machining process;

cutting said bar stock into a blank having a length larger than a length of the turbine
10 blade;

machining said blank to form the turbine blade using said machining process.

4. A process in accordance with claim 3, wherein:

said hot forming of said bar stock is performed by one of hot rolling, drop forging, press
forging, and precision forging.

5. A process in accordance with claim 3, wherein:

said machining process includes milling.

6. A process in accordance with claim 3, wherein:

said hot forming includes hot rolling on a mill train with rollers that are calibrated
according to said bar stock cross section.

7. A process in accordance with claim 3, wherein:

said hot forming includes drop forging or press forging a rhomboidal bar in a multi-part hollow mold by pressure.

8. A process in accordance with claim 3, wherein:

said hot forming includes precision forging using a two-part die open on two sides and having said bar stock cross section, said precision forging is performed by stretching of said bar stock by a serial application of pressures with one of pressing strips, pressing paths or webs extending at right angles to a longitudinal axis of said bar stock.

9. A process in accordance with claim 4, wherein:

said machining process includes milling;

said hot forming includes one of

hot rolling on a mill train with rollers that are calibrated corresponding to said bar stock cross section;

drop forging or press forging a rhomboidal bar in a multi-part hollow mold by an action of pressure;

precision forging using a two-part die open on two sides and having said bar stock cross section, said precision forging is performed by stretching of said bar stock by a serial application of upsetting pressures with one of pressing strips, pressing paths or webs extending at right angles to a longitudinal axis of said bar stock.

10. A process for creating blades with a blade footing of a rhomboidal cross section and a blade body, the process comprising the steps of:

determining a maximum cross section and length of the blades;

hot forming a bar shaped input stock with a substantially rhomboidal cross section, said cross section of said input stock being larger than said maximum cross section of the blades by a machining allowance;

cutting said bar shaped input stock into blanks having the length of the blades;

machining said blanks to form the blades according to said machining allowance.

11. A process in accordance with claim 10, wherein:

said machining is milling.

12. A process in accordance with claim 10, wherein:

said blanks have a length of the blades plus a clamping length.

13. A process in accordance with claim 10, wherein:

said machining has a minimum machining allowance, said input stock is larger than said maximum cross section of the blades by said minimum machining allowance.

14. A process in accordance with claim 10, wherein:

said hot forming of said bar-shaped input stock is performed by hot rolling.

15. A process in accordance with claim 10, wherein:

said hot forming of said bar-shaped input stock is performed by one of drop forging and press forging.

16. A process in accordance with claim 10, wherein:

said hot forming of said bar-shaped input stock is performed by precision forging.

17. A process in accordance with claim 10, wherein:

said machining is milling;

said blanks have a length of the blade plus a clamping length;

said machining has a minimum machining allowance, said input stock being larger than

5 said maximum cross section of the blade by said minimum machining allowance;

said hot forming of said bar-shaped input stock is performed by one of hot rolling, drop forging, press forging, and precision forging.